

between, the particles of wet soil. The front legs were waved about continually, and seemed to be used essentially as tactile organs, an observation which is supported by the large number of sensory setae on tarsus I compared with the remaining leg segments (see Table 2).

The second and third series were placed on two thicknesses of wet filter paper in individual blocks to facilitate finding the larval pelts. Five larvae (Mt. Nebo, 30.vii.54) formed the second series. Next day three were still actively walking about; the last one became quiescent on the fifth afternoon. While active, the larvae became trapped in water droplets, and, though they were always released at first, it soon became evident that the water had no effect whatever on them. The characteristic retraction of the internal tissues from the legs, etc., started on the eleventh day, and on the eighteenth day the legs of one nymph were seen inside the larval pelt. Two nymphs were found after 21 days, and two more next day. The last two were not killed for two days, but their colour did not change. The fifth larva died.

Five larvae (Annerley, 24.ix.54) were set up in the third series. The last one became quiescent after seven days, and three nymphs were found after 31 days. In the second and third series all larval pelts were recovered. Examination of these showed that the larval skin was split transversely in front of the scutum, and that a wide strip of cuticle (including scutum and eyes) had been torn back almost to the end of the hysterosoma, allowing emergence of the nymph.

EUSCHÖNGASTIA PERAMELES (Womersley, 1939).

Types: Five morphotype nymphs in collection of Queensland Institute of Medical Research, Brisbane, two at South Australian Museum, Adelaide, and one at Institute for Medical Research, Kuala Lumpur. All eight specimens reared from engorged larvae from *Isoodon obesulus*, Brisbane and Mt. Nebo, S.E. Queensland, June to September, 1954. Correlated larval pelts accompany seven of the nymphs.

Description of Nymph.

Body: Mean idiosomal length 757μ (range 720 to 780μ), breadth across propodosoma 322μ (300 to 345μ), across hysterosoma 371μ (330 to 390μ); fairly well-marked constriction at level of posterior pair of coxae; pale, velvety yellow in life. Genital area oval (Text-fig. 9), 105μ long, with two pairs of genital suckers; anterior sucker 25.3μ , posterior sucker 20.4μ long. Two narrow genital plates each with seventeen to twenty ciliated setae in two rows; two anal plates (Text-fig. 5) not so narrow, 78.8μ long, with about twelve ciliated setae.

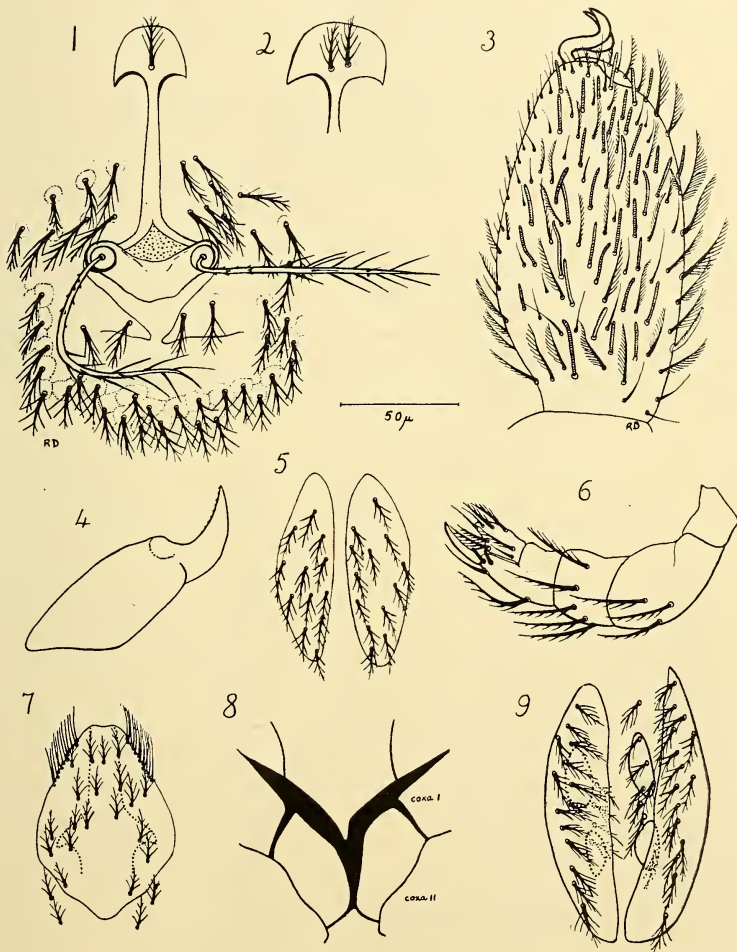
Gnathosoma: Chelicerae (Text-fig. 4) with row of fine teeth (difficult to see at some angles) on concave dorsal edge; blade 30.8μ long. Hypostome (Text-fig. 7) blunt, with two patches of about 24 simple setae laterally, behind which are about twenty scattered ciliated setae.

Palpi (Text-fig. 6) 5-segmented; tarsus 28.8μ , tibia 35.8μ , genu 31.5μ , femur 61μ long (in lateral view); tibial claw 25.9μ long. Femur with two to four ciliated setae dorsally, one shorter laterally, and one or two ventrally; genu with about four similar setae dorsally and about five ventro-laterals; tibia with about five dorso-lateral ciliated setae; in addition to strong apical spine, tibia with one thin, external and (?) two shorter internal sub-apical accessory spines; tarsus with six ciliated setae, and two apical and (?) one internal basal simple setae.

Legs: Leg I largest, leg IV longer than legs II and III, which are almost equal. Lengths excluding claws, I 531μ , II 341μ , III 319μ , IV 385μ ; all 7-segmented; coxae I with precoxal plates fused medially (Text-fig. 8). All tarsi with two strong, equal claws. Coxae I & II and III & IV in two distinct groups, only coxae I being fused. Tarsus I 134μ long, 69μ high; tibia I 74μ long, tarsus II 75μ long, tibia II 44μ long (all in lateral view, after Womersley, 1952, p. 17).

Scutum (Text-fig. 1): Sensillary area roughly diamond-shaped, with anterior part punctate between sensillary bases. Tectum not dentate anteriorly; single tectal seta in all but one specimen, which has two (Text-fig. 2); there is only one AM seta in larval

pelt of this specimen. No median carina on sensillary area. Posterior apodeme with irregular sides, sometimes with two sinuous lines diverging laterally at the apex, as in *S. maldivensis* (see Womersley, 1952, plate 102A). Sensillae filiform, of fairly uniform thickness, but slightly thicker medially, with basal barbulæ merging into ciliations to



Text-figs. 1-9.

Euschöngastia perameles (Wom., 1939). Nymph. 1, Scutum and surrounding setae. 2, Abnormal tectum with two tectal setae. 3, Setation of tarsus I in lateral view. 4, Chelicera. 5, Anal plates. 6, Inner dorsal view of palpus. 7, Hypostome in ventral view. 8, Pre-coxal plates (setation omitted). 9, Genitalia, slightly distorted by pressure.

17μ long distally. Eyes absent. Parascutal setae one on each side, with variable number of setae laterally. The scutal standard data are given in Table 1 after the system suggested by Audy, 1953.

TABLE 1.
Standard Data (in Micra) of *Scutum* of *E. perameles*.

CTL	ASL	SB	$\frac{\text{ASL}}{\text{SB}}$	PSL	PAD	TS	SS	SENS
72	93	41	2.27	21	42	17	28	119
70	83	37	2.24	17	35	19	28	112
70	80	35	2.29	18	38	19	28	102
73	84	37	2.27	17	38	17	28	112
66	83	38	2.19	17	35	17	26	105
Mean	70.2	84.6	2.25	18.0	37.6	17.8	27.6	110

Setation: Body setae short, strongly ciliated, on small close-set, sub-circular platelets 10.5μ in diameter; dorsal setae 22.7 to 31.5μ , ventral setae similar, but shorter, 17.5 to 22.7μ long. The essential leg setation is set out as exactly as possible in Table 2, after Audy (1953); however, variation is considerable, especially with the normal ciliated setae. The blunt, finger-like, sensory setae are narrow, to 21μ , the simple, tapering, sensory setae to 28μ , and the normal ciliated setae to 35μ long. Micro-setae were seen only on the three segments noted. The detailed setation of tarsus I is given in Text-figure 3. Pre-coxal plates with about seven ciliated setae each.

TABLE 2.
Setation of Legs of *E. perameles*.

Segment.	Microsetae.	Blunt Finger-like.	Fine Tapering.	Normal Ciliated.
Tarsus I	Several v	c. 60 dl, few v	c. 30	60+
Tibia I	(1d)	10 dl., 1-2 v	8-10 dl	18
Genu I	(1d)	6 dl	6-7 dl	17-23
Femur I	—	—	1 ds	15-24
Tarsus II	—	4-6 dl	3 d	c. 30
Tibia II	—	2 dl	2-4 d	17-26
Genu II	—	—	2-3 d	12-18
Femur II	—	—	(1 ds)	16-23
Tarsus III	—	1 or 2 dl	—	25-35
Tibia III	—	—	2-4 d	9-24
Genu III	—	—	2-3 d	6-18
Femur III	—	—	(1 ds)	9-17
Tarsus IV	—	2 dp	2-3 d	24-32
Tibia IV	—	—	4-6 d	14-30
Genu IV	—	—	2-4 d	8-20
Femur IV	—	—	—	8-19

d, dorsal; v, ventral; l, lateral; p, proximal; s, distal.

Taxonomic Notes.

In Womersley's key (1952, p. 376), the nymph runs to caption 10, which includes *E. mutabilis* and *E. nadchatrami*. It may be separated from *mutabilis* by its longer sensillae and relatively uniform dorsal setae, from *nadchatrami* by its much shorter crista and thicker sensillae, and by the presence of pre-coxal plates. However, the relationships of the key seem to be entirely arbitrary. *E. mutabilis* is one of a group (*globulare* group of Womersley, 1952) whose larvae have strikingly approximated sensillary bases, for which Audy (1953) erected the subgenus *Helenicula*. *E. nadchatrami*